

Presented By
City of Sonoma



Annual
**WATER
QUALITY
REPORT**
Reporting Year 2011

PWS ID#: 4910012

Meeting the Challenge

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2011. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts or concerns about the information in this report. After all, well-informed customers are our best allies.

Source Water Assessment

In 2004, the City conducted a thorough Source Water Assessment of the City's municipal groundwater wells. According to the assessments, all sites are in compliance with federal safe drinking water guidelines. A complete copy of the Source Water Assessment may be viewed at City Hall, #1 The Plaza, Sonoma, CA.

Where Does My Water Come From?

The City of Sonoma water customers are fortunate because we enjoy a safe, reliable water supply from two sources. The City's primary source is water purchased from the Sonoma County Water Agency (SCWA), whose source of supply is five Ranney Collectors (or caissons) located in the gravels adjacent to the Russian River, seven production wells, and, to a minor degree, from three wells in the Santa Rosa plain. One of the Water Agency's Ranney Collectors, referred to as Caisson 5, is the only source among these wells that is subject to surface water treatment regulations, and this is only when high flow conditions exist in the Russian River.

The river originates in central Mendocino County, approximately 15 miles north of the City of Ukiah. The main channel of the river is approximately 110 miles long and flows southward from its headwaters near Potter Valley to the Pacific Ocean near Jenner, about 20 miles west of the City of Santa Rosa.

Our secondary water source consists of six City groundwater wells, which are capable of producing a combined total of approximately 1.5 million gallons of water a day. The City of Sonoma uses these wells as a supplementary supply. The wells are ready for production when there is a need to augment SCWA deliveries during periods of high use, typically during the hot summer months, and for other water-related emergencies that can develop. In 2011, the City of Sonoma Water Department purchased 622 million gallons of water from the SCWA, and, in addition, the City produced 7 million gallons from its groundwater wells during the months of January through September. Once the water has been purchased or produced, it enters the City's distribution system, which includes more than 48 miles of water main, 4,301 service connections, five storage tanks, two pumping stations, and six wells, one of which is standby. In order to provide a high level of customer service, our water utility personnel monitor water levels in the City's storage tanks, operate City wells, sample its wells and distribution system for laboratory analysis, install new service connections and meters, read customers' meters for billing, and maintain and repair the water system as needed.

We would like to thank you for your continued efforts to help us continue our water efficiency efforts. This year we will be asking our customers to use water wisely, especially during hot summer months and to utilize the conservation resources available to our residents.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include: **Microbial Contaminants**, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; **Inorganic Contaminants**, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; **Pesticides and Herbicides**, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems; **Radioactive Contaminants**, that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The City Council meets the first and third Mondays of each month beginning at 6 p.m. at the Community Meeting Room, located at 177 First St. West, Sonoma, CA. For further information about City Council meetings, please contact City Hall at (707) 938-3681.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Steve MacCarthy, Water Operations Supervisor, at (707) 933-2231.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.



Who uses the most water?

On a global average, most freshwater withdrawals—69 percent—are used for agriculture, while industry accounts for 23 percent and municipal use (drinking water, bathing and cleaning, and watering plants and grass) just 8 percent.

How much water does a person use every day?

The average person in the U.S. uses 80 to 100 gallons of water each day. During medieval times, a person used only 5 gallons per day.

Should I be concerned about what I'm pouring down my drain?

If your home is served by a sewage system, your drain is an entrance to your wastewater disposal system and eventually to a drinking water source. Consider purchasing environmentally friendly home products whenever possible, and never pour hazardous materials (e.g., car engine oil) down the drain. Check with your health department for more information on proper disposal methods.

How long does it take a water supplier to produce one glass of water?

It can take up to 45 minutes to produce a single glass of drinking water.

How much emergency water should I keep?

Typically, 1 gallon per person per day is recommended. For a family of four, that would be 12 gallons for 3 days. Humans can survive without food for 1 month, but can only survive 1 week without water.

Where does a water molecule spend most of its time on Earth?

In a 100-year period, a water molecule spends 98 years in the ocean, 20 months as ice, about 2 weeks in lakes and rivers, and less than a week in the atmosphere.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES									
				City of Sonoma		SCWA			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppm)	2011	1	0.6	0.1098	ND–0.549	NA	NA	No	Erosion of natural deposits; Residue from some surface water treatment processes
Arsenic ¹ (ppb)	2011	10	0.004	6.98	5.7–8.7	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Glass and electronics production wastes
Fluoride (ppm)	2011	2.0	1	0.33	0.23–0.5	0.13	0.11–0.15	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids (ppb)	2011	60	NA	2.84	ND–3.7	5.87	ND–14.82	No	By-product of drinking water disinfection
Nitrate [as nitrate] (ppm)	2011	45	45	1.78	ND–6.7	0.14	ND–1.3	No	Runoff and leaching from fertilizer use; Leaching from septic tanks and sewage; Erosion of natural deposits
Perchlorate (ppb)	2011	6	6	NA	NA	NA	NA	No	An inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries; Historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts
TTHMs [Total Trihalomethanes] (ppb)	2011	80	NA	23.8	21–29	13.6	6.3–21.4	No	By-product of drinking water disinfection
Total Coliform Bacteria [Total Coliform Rule] (% positive samples)	2011	More than 5.0% of monthly samples are positive	(0)	ND	NA	1 ²	NA	No	Naturally present in the environment
Tap water samples were collected for lead and copper analyses from sample sites throughout the community									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE		
Copper (ppm)	2011	1.3	0.3	0.059	0/30	No	Internal corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives		
Lead (ppb)	2011	15	0.2	5	0/30	No	Internal corrosion of household water plumbing systems; Discharges from industrial manufacturers; Erosion of natural deposits		
SECONDARY SUBSTANCES									
				City of Sonoma		SCWA			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	EXCEEDANCE	TYPICAL SOURCE
Aluminum (ppb)	2011	200	NS	109.8	ND–549	NA	NA	Yes ³	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2011	500	NS	8.28	6–12	9.7	5.5–25	No	Runoff/leaching from natural deposits; Seawater influence
Specific Conductance (µS/cm)	2011	1,600	NS	220	180–270	256	240–270	No	Substances that form ions when in water; Seawater influence
Sulfate (ppm)	2011	500	NS	5.68	2.9–9.7	10.4	2.1–16	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids (ppm)	2011	1,000	NS	172	190–240	154	130–200	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2011	5	NS	1.36	0.2–3.8	0.063	ND–0.16	No	Soil runoff
Zinc (ppm)	2011	5.0	NS	0.1063	ND–0.502	NA	NA	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED AND OTHER SUBSTANCES						
		City of Sonoma		SCWA		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Calcium (ppm)	2011	9.28	3.9–14	18.8	12–22	Erosion of natural deposits
Magnesium (ppm)	2011	4.84	1.2–8.0	9.8	2.0–14	Erosion of natural deposits
pH (Units)	2011	7.64	7.3–8.1	7.4	6.9–8.2	Naturally occurring
Sodium (ppm)	2011	27.6	19–44	15.8	6.7–37	Erosion of natural deposits
Total Hardness (ppm)	2011	43	14–69	87.2	38–144	Calcium and Magnesium concentration

Definitions

AL (Regulatory Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

PDWS (Primary Drinking Water Standard): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

¹While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. The U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

²Out of 477 samples, one was positive.

³This was a non-health based exceedance of the Secondary MCL (SMCL). SMCLs are established in order to regulate the aesthetics of water (i.e., taste and odor). The high levels were detected at Well #6, which has now been placed on quarterly monitoring.